

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Re: Appeal to the Board of Patent Appeals and Interferences

Appellants: MacDonald et al.)	Examiner: Eric E. Silverman
)	
Serial Number: 10/686,933)	Group Art Unit: 1618
)	
Filed: October 16, 2003)	Customer Number: 22827
)	
Confirmation No: 4589)	Deposit Account: 04-1403
)	
Title: Method for Reducing Odor Using Colloidal Nanoparticles)	Attorney Docket No: KCX-665 (19232)
)	

1. ☐ **NOTICE OF APPEAL:** Pursuant to 37 CFR 41.31, Applicant hereby appeals to the Board of Appeals and interferences from the last decision of the Examiner.
2. ☐ **PRE-APPEAL BRIEF REQUEST FOR REVIEW:** Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal. The review is requested for the reason(s) stated on the attached sheet(s) [No more than five (5) pages may be provided.]
3. ☐ **BRIEF** on appeal in this application pursuant to 37 CFR 41.37 is transmitted herewith (1 copy).
4. ☐ An **ORAL HEARING** is respectfully requested under 37 CFR 41.47 (due within two months after Examiner's Answer).
5. ☒ Reply Brief under 37 CFR 41.41(b) is transmitted herewith (1 copy).
6. ☐ "Small entity" verified statement filed: [] herewith [] previously.

7. **FEE CALCULATION:**

	Fees
If box 1 above is X'd enter \$ 540.00	\$ <u>0.00</u>
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PETITION is hereby made to extend the original due date of November 28, 2009, hereby made for an extension to cover the date this response is filed for which the requisite fee is enclosed (1 month \$130; 2 months \$490; 3 months \$1,110; 4 months \$1,730, 5 months \$2,350

\$ 0.00

SUBTOTAL: \$ 0.00

Less any previous extension fee paid since above original due date. - \$ 0.00

Less any previous fee paid for prior Notice of Appeal since Board did not render a decision on the merits. MPEP § 1204.01 - \$ 0.00

Less any previous fee paid for submitting Brief on prior Appeal since
Board did not render a decision on the merits. MPEP § 1204.01 - \$ 0.00

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TOTAL FEE ENCLOSED: \$ 0.00

- ☐ Fee enclosed.
- ☐ Charge fee to our Deposit Account/Order Nos. in the heading hereof (for which purpose one additional copy of this sheet is attached)
- ☒ Charge to credit card (attach Credit Card Payment Form – PTO 2038)
- ☐ Fee NOT required since paid in prior appeal in which the Board of Appeals did not render a decision on the merits.

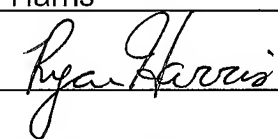
The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any fees in addition to the fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 (deficiency only) now or hereafter relative to this application and the resulting official document under Rule 20, or credit any overpayment, to our Account No. shown in the heading hereof. This statement does not authorize charge of the issue fee in this case.

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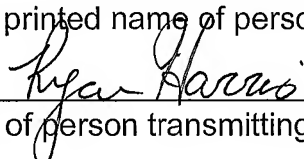
Signature: 

Date: November 25, 2009

I hereby certify that this correspondence and all attachments and any fee(s) are being electronically transmitted via the internet to the U.S. Patent and Trademark Office using the Electronic Patent Filing System on November 25, 2009.

Ryan P. Harris

(Typed or printed name of person transmitting documents)


(Signature of person transmitting documents)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Colloidal Nanoparticles)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF TO EXAMINER'S ANSWER

Appellants submit the following reply brief in accordance with 37 C.F.R. § 41.41:

1. REAL PARTY IN INTEREST

See Appellants' Brief on Appeal.

2. RELATED APPEALS AND INTERFERENCES

See Appellants' Brief on Appeal.

3. STATUS OF CLAIMS

See Appellants' Brief on Appeal.

4. STATUS OF AMENDMENTS

See Appellants' Brief on Appeal.

5. SUMMARY OF CLAIMED SUBJECT MATTER

See Appellants' Brief on Appeal.

6. **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

See Appellants' Brief on Appeal.

7. **ARGUMENT**

See Appellants' Brief on Appeal.

Response to Examiner's Answer

The Examiner responds to Appellants' first argument indicating that Appellants do not dispute that the Snowtex-AK particles of Takaoa read on the claimed particles and that Appellants "argument does not make good technical sense" because in order to decompose odors, the particle must first adsorb it. However, the Examiner seems to misconstrue Appellants' arguments. Appellants' claims include the limitation of "colloidal **silica nanoparticles** configured to adsorb one or more odorous compounds." While Appellants agree that Snowtex-AK **BY THEMSELVES** are capable of odor adsorption, Appellants note that when utilized in accordance with Takaoa, the Snowtex-AK particles are not configured to adsorb odorous compounds.

As explained by Takaoa, the purpose of the inorganic fine particles (which may be Snowtex-AK particles) is simply to limit contact of the organic fine particles with the photoreactive semiconductor. Again, "the inorganic fine particle component is located between the photoreactive semiconductor and the organic fine particle component, so that the organic fine particle component can markedly avoid the strong influence of oxidative decomposition by the photoreactive semiconductor." ¶ [0052]. Thus, the inorganic particles are sandwiched between an organic fine particle layer and the photoreactive semiconductor layer.

Furthermore, the photoreactive semiconductor layer includes other components such as a carrier which serve to further inhibit the ability of the inorganic fine particles to adsorb odorous compounds. As taught by Takaoa:

When there is used a carrier having gas adsorbability in itself, . . . the ability to remove harmful materials without light irradiation is also improved. . . when the temperature of the carrier is raised by light irradiation, harmful materials adsorbed on the carrier without light irradiation are released and at the same time, decomposed by the photoreactive semiconductor supported on the carrier. ¶ [0119].

Furthermore, a carrier assists to inhibit “leakage and dispersion of the photoreactive semiconductor.” ¶ [0035] and ¶ [0117]. This also keeps a greater number of “active sites” available **on the surface of the photoreactive semiconductor**.

Thus, while the entire structure of Takaoa may be configured “adsorb” odorous compounds as defined by the Examiner¹, Appellants submit that the **SNOWTEX-AK** particles of Takaoa (i.e. “inorganic fine particles”) are not “configured to adsorb odorous compounds” as claimed by Appellants in the context of Takaoa’s teaching. The “sandwiching” of the inorganic fine particles between two other layers (organic fine particles and photoreactive semiconductor layer), especially in light of the fact that the odorous compounds are meant “to associate with a surface” of the photoreactive semiconductor particles, indicates that the inorganic fine particles of Takaoa are not configured to adsorb odorous compounds as claimed by Appellants.

In response to Appellants’ next argument that Takaoa fails to teach that the Snowtex particles are useful in odor control, the Examiner cites the purpose of the invention of “removing a low concentration of such harmful materials, in particular malodors in daily life.” Appellants do not dispute that the entire structure of Takaoa is

¹ Note: while the Examiner “defined” “absorb,” Appellants believe this may be a typographical error as Appellants claim “configured to adsorb.”

directed to odor control. However, clearly the “odor control” of Takaoa is accomplished at the photoreactive layer. There is no disclosure or suggestion that the Snowtex particles are useful for adsorbing odorous compounds. Furthermore, the entire purpose of the inorganic fine particles (which, by the way, can be any number of substances listed throughout the disclosure of Takaoa and particularly on page 9 – of which Snowtex components are one possibility) is to provide a separation layer between the organic particles and the photoreactive layer.

The Examiner then counters that, “even if the Board believes Appellants’ assertion,” since Takaoa teaches the use of Snowtex particles in conjunction with other odor-control particles, the Board should affirm the rejection. Again, however, while Takaoa teaches the use of Snowtex particles in an odor control article, the **purpose** of the Snowtex particles (i.e. inorganic fine particles) is wholly unrelated to actual odor adsorption as claimed by Appellants. Honda does not utilize the “organic fine particles” of Takaoa. Thus, in view of the teaching of Takaoa, there would simply be no reason to incorporate “inorganic fine particles” into Honda. Only in light of Appellants’ specification would one be so motivated.

In response to Appellants’ next argument that Honda teaches away from incorporating Takaoa’s Snowtex particles, the Examiner states that “like Honda, Takaoa decomposes malodorous compounds. Takaoa teaches SNOWTEX as one particle that can accomplish this goal.” Appellants disagree. Nowhere does Takaoa indicate that Snowtex is beneficial for anything other than keeping the organic particles from being oxidized by the photoreactive semiconductor. Nowhere does Takaoa indicate that the Snowtex particles themselves “decomposes malodorous compounds.” Simply put, if the

particles of Honda were substituted with Snowtex particles, Honda would be transformed from a decomposer of odors to an adsorber (that does not decompose) of odors. Honda **clearly** teaches away from such a modification:

There are also known deodorants which utilize physical adsorption, such as active carbon and silica. **However, with these, the malodorous compounds are adsorbed and not decomposed, so they do not fundamentally resolve the situation.** Ideally, it is necessary that malodorous compounds be completely decomposed to odorless components. Pg. 2, ¶ [0005], ll. 30-32 (emphasis added).

Next, the Examiner indicates that “even if the artisan would not replace Honda’s particles with SNOWTEX, the argument does not address the alternative rationale for obviousness: that it would be obvious to combine SNOWTEX particles with the particles of Honda.” Again, as noted previously, Takaoa discloses an explicit purpose for the “inorganic fine particles” of separating the organic particles from the photoreactive semiconductor in order to inhibit oxidation of the organic particles. Honda does not utilize organic particles such as those disclosed in Takaoa. One skilled in the art would simply not look to Takaoa, pick out specific “inorganic fine particles” (i.e. Snowtex) that serve a purpose in Takaoa completely unrelated to anything helpful to the structure of Honda and deem it obvious to combine with Honda.

The Examiner then deemed Appellants’ next argument that improper hindsight was used in making the rejection “unimpressive” as “Appellants are unable to point to anything in the rejection that was gleaned from Appellants’ disclosure.” Contrary to that indicated in the Examiner’s Answer, Appellants’ believe their reasoning that improper hindsight was used in making the rejection is clear. The Examiner purports to take a single specific component (i.e. not just “inorganic fine particles,” but particularly Snowtex particles) from the product of Takaoa, wherein Takaoa teaches that the particular

component is utilized for reasons entirely unrelated to anything disclosed in the primary reference (Honda), and incorporate it into the structure of Honda. Only in light of Appellants' specification would one skilled modify Honda in such an otherwise arbitrary manner. As such, again, it is respectfully submitted that the purported combination of Honda and Takaoa relies on the impermissible use of hindsight, which cannot be successfully used to support a *prima facie* case of obviousness

Finally, in response to Appellants' arguments with respect to the Beaverson reference, the Examiner indicates that Beaverson teaches incorporation of odor control elements at claim 21.² Again, however, Beaverson merely discloses a barrier (i.e. a "wrap") for keeping odor contained within the diaper. Appellants claim an odor adsorbing substrate incorporated into an absorbent article. Beaverson merely discloses a barrier wrap. Nowhere does Beaverson disclose utilizing an odor adsorbing substrate in conjunction with an absorbent article. Furthermore, whether or not Appellants "smell flowers everywhere," if the benefits of adding Appellants' claimed odor adsorbing substrate to a diaper are so "readily apparent even to a layperson," one would think that the Examiner would have no problem pointing to such evidence in the prior art. However, the Examiner has failed to do so, and as such, has failed to carry his burden of proving a *prima facie* case of obviousness.

² Appellants believe the Examiner mistakenly denoted claim 20.

In conclusion, Appellants request favorable action and allowance of the presently pending claims.

Respectfully requested,

DORITY & MANNING, P.A.

A handwritten signature in black ink, appearing to read "Ryan Harris", is written over a horizontal line.

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8. **CLAIMS APPENDIX**

See Appellants' Brief on Appeal.

9. **EVIDENCE APPENDIX**

None

10. **RELATED PROCEEDINGS APPENDIX**

None